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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY


(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 12-AUG 2005

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Applicant's or agent's file reference DPW/Y3369	FOR FURTHER ACTION See Form PCT/PEA/416	
International application No. PCT/EP2004/004997	International filing date (day/month/year) 07.05.2004	Priority date (day/month/year) 07.05.2003
International Patent Classification (IPC) or national classification and IPC C09D5/16		
Applicant SIGMAKALON SERVICES B.V.		
<ol style="list-style-type: none"> 1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of 7 sheets, including this cover sheet. 3. This report is also accompanied by ANNEXES, comprising: <ol style="list-style-type: none"> a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 3 sheets, as follows: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (sent to the International Bureau only) a total of (Indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions). 		
<ol style="list-style-type: none"> 4. This report contains indications relating to the following items: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Box No. I Basis of the opinion <input type="checkbox"/> Box No. II Priority <input checked="" type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application 		
Date of submission of the demand 07.12.2004	Date of completion of this report 12.08.2005	
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Matthijssen, J-J Telephone No. +31 70 340-3885	



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/004997

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-31 as originally filed

Claims, Numbers

1-5, 7-16, 18, 21, 22 as originally filed
6, 17, 19, 20, 23-25 received on 17.05.2005 with letter of 17.05.2005

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/004997

Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:
- ☐ the entire international application,
 - ☒ claims Nos. 23-25
because:
 - ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):
 - ☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 23-25 are so unclear that no meaningful opinion could be formed (*specify*):
see separate sheet
 - ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
 - ☐ no international search report has been established for the said claims Nos.
 - ☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:
 - the written form ☐ has not been furnished
 - ☐ does not comply with the standard
 - the computer readable form ☐ has not been furnished
 - ☐ does not comply with the standard
 - ☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.
 - ☐ See separate sheet for further details

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/004997

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-9, 11, 14, 16-22
	No: Claims	10, 12, 13, 15
Inventive step (IS)	Yes: Claims	1-9, 11, 14, 16-22
	No: Claims	10, 12, 13, 15
Industrial applicability (IA)	Yes: Claims	1-25
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item III

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

Claim 23 is not clear as it is not understood what is meant by "the silylester as defined". Moreover, some co-binders are defined by a trademark or by reference to a patent document.

Claim 24 is not clear for the first reason set out above for claim 23.

Claim 25 is not clear for the same reasons as claim 23.

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

The European patent application EP 1 295 888 A (=D1) discloses a process for preparing trialkyl silylated carboxylic acid esters by reacting an acyloxysilane of formula: $R^7-COO-SiR^1R^2R^3$ (II), wherein R^7 is a hydrogen or a C_1-C_3 alkyl group, with an unsaturated carboxylic acid of formula $R^5-CH=C(R^4)-COOH$, wherein R^4 is a hydrogen or a methyl group, and R^5 may be a hydrogen or an alkyl group, thus, e.g. acrylic (or methacrylic) acid. Said both acids have a boiling point higher than the boiling point of, e.g. formic acid or acetic acid, i.e. the carboxylic acid corresponding to the acyloxysilane of formula (II). Polymers of the trialkylsilylated carboxylate monomers are useful in antifouling compositions, they give a film which shows moderate hydrolysability (§0031).

Novelty Article 33(2) PCT

The use of the polymers above as an alkaline hydrolysis or erodability booster is not mentioned in D1. Therefore, the subject matter of claim 1 is novel. The same applies to claims 2-5.

The acid contains a vinylic alpha carbon. Therefore, the subject matter of claim 6-9 is novel in view of D1.

The subject matter of claims 10, 12, 13 and 15 does not make the proviso relating to the non-vinyl alpha carbon and is therefore not novel in view of D1.

Unsaturated carboxylic acids have been excluded from the subject matter of claim 16.

Therefore, the subject-matter of claim 16 appears to be novel in view of D1.

The same applies to claims 17-22 as they are depending on claim 16.

Inventive step Article 33(3) PCT

The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, 6, 7, 8 and 16 and discloses a process for preparing trialkyl silylated carboxylic acid esters and polymers thereof useful in antifouling compositions.

The differences between D1 and claims 1, 6, 7, 8 and 16 are set out above.

The problem to be solved by the present invention may therefore be regarded as to provide a trialkyl silylated carboxylic acid esters for controlling the rate of hydrolysis of the binder system of a paint (claim 1).

To provide a trialkyl silylated carboxylic acid esters binder resin based on an alternative carboxylic acid (claims 6, 7, 8 and 16).

None of the available prior art documents provides the skilled person an incentive to solve the problem posed.

Therefore, the subject matter of claims 1, 6, 7, 8 and 16 involves an inventive step. The same applies to the subsequent dependent claims 2-5, 9, 14, 17-22.

Re Item VI

Certain documents cited

Certain published documents

Application No Patent No	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
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EP 1 308 484

07-05-2003

30-10-2001

Re Item VIII

Certain observations on the international application

A number of non-conformities with regard to clarity of claims, inconsistency, lack of support have been recorded.

1.1

Claim 10 in its present form is not supported by the description. That can be remedied by making said claim dependent on claim 8 (like claim 9) in accordance with the description (page 6, third paragraph).

1.2

Claims 11, 14, 15, 17-25 are objected to on the grounds that a claim may leave no doubt as to its category (i.e. use, process or product) according to the PCT Guidelines, C-III, 4(1).

1.3

Claim 12 is not consistent with the description (page 7, lines 8-10) as the feature "other than rosin" is not quoted there.

1.4

Claim 16: The cumbersome repetition of the text of claim 15 could be easily avoided by the formulation "A process for producing a silyl ester of formula (1) as defined in claim 15 ...".

1.5

Claims 19 and 23: Trade marks as a general rule are not allowable in claims (cf. PCT Guidelines C-III, 4(5)b). Moreover, claim 23 should be clear as such, thus without reference to other patent documents.